

ENERGY RETURN WHEEL SYSTEMS AND METHODS

ABSTRACT OF THE DISCLOSURE

[0076] The present invention provides exemplary wheel assemblies for use with a wide range of wheeled vehicles and apparatus. In one embodiment, a wheel assembly (800) includes a rim (810) having edges (816, 818). The wheel assembly includes a plurality of protrusions 822 disposed in a trough portion (820) between the rim edges. A resilient member (830) is disposed over the spaced protrusions, and an actuator (850) is disposed over the resilient layer. The actuator is adapted to at least partially compress the resilient layer between the spaced protrusions when the wheel assembly is loaded with a weight. In this manner, the wheel assembly is capable of providing energy return to the wheel assembly during rotation thereof.